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09/641,147	08/17/2000	Sung- Oh Hwang	678-522 (P9490)	4729
28249	7590	08/03/2006	EXAMINER	
DILWORTH & BARRESE, LLP 333 EARLE OVINGTON BLVD. UNIONDALE, NY 11553			CHANG, EDITH M	
			ART UNIT	PAPER NUMBER
			2611	

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Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary

Application No.

09/641,147

Applicant(s)

HWANG ET AL.

Examiner

Edith M. Chang

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 May 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 9-16 and 24-47 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 9-16 and 24-47 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 August 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Response to Arguments/Remarks

1. Applicant's remarks filed May 15, 2006, have been fully considered but they are not persuasive.

Argument: Applicants argue that the multiple references used in the 35 U.S.C. 102 were not proper, since the extra references are not cited to: (A) Prove the primary reference contains an "enabled disclosure;" (B) Explain the meaning of a term used in the primary reference; or (C) Show that a characteristic not disclosed in the reference is inherent.

Response: The main reference TSGR1#5(99)724 is a proposal for TS 25.213, hence, the TSGR1#5(99)724 and TS 25.213 is one reference, and the TS 25.213 is used to explain the meaning of terms used in the TSGR1#5(99)724, e.g. DPCH as stated in the previous Office action; the TS 25.211 is used to explain the meaning of terms used in the TSGR1#5(99)724, e.g. CCPCH as stated in the previous Office action.

The references TS 25.211 and TS 25.213 describe the characteristics of the Radio Access Network (RAN) Layer 1 transport channels and physicals channels and spreading and modulation in the FDD mode of UTRA which include characteristics not disclosed in the main reference TSGR1#5(99)724 but are inherent for the main reference TSGR1#5(99)724 Multiple scrambling codes for Downlink spreading and modulation.

Therefore, the multiple references used in the 35 U.S.C. 102 are proper.

Drawings

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the searcher, the descrambler and the controller of claim 42 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

4. Claims 9-16 and 24-35 are rejected under 35 U.S.C. 102(a) as being anticipated by Ericsson (Multiple scrambling codes TSGR1#5(99)724), 3GPP TS 25.213 V2.00 (1999-4) Spreading and modulation and 3GPP TS 25.211 V2.00 (1999-04) Mapping of transport channels onto physical channels.

Regarding **claims 9, 13, 24 & 30**, the 3GPP discloses a channel code communication, the Universal Terrestrial Radio Access (UTRS) for the 3G mobile communication comprising at least a base station and at least a mobile station and their methods.

The base station in each cell uses (*scrambling*) a primary scrambling code divided into 32 scrambling groups (ID, 5.2.2, the first paragraph, TSGR1#5(99)724) *assigned to (identified)* it for *transmitting* over the primary CCPCH (as the *common channel*, 5.2.2 the third paragraph, TSGR1#5(99)724), and other downlink physical channels comprising DPCH (as the *data channel*, 5.3.2 TS 25.211 V2.00 & 5.1 TS 25.213 V2.0.0) can be transmitted with a secondary scrambling code from the set (ID) associated with the primary scrambling code (5.2.2, the third paragraph, TSGR1#5(99)724) to extend scrambling codes to avoid code limitation when the capacity is increased (5.2.2, the first paragraph and the second paragraph in the

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brackets, TS 25.213 V2.0.0). These downlink channels are transmitted to the mobile station;

The mobile station *acquires* the primary scramble code during synchronization in the cell search (5.3.3.3, the first paragraph, TS 25.211 V2.0.0), *despreading* a received data signal scrambled by the secondary code, with a *generated* secondary scrambling code from the set (ID) associated with the primary scrambling code in one the 32 scrambling groups (ID),

Wherein the scrambling codes (the primary and the secondary) C_{scramb} are *complex scrambling* codes (5.1, Figure 10 & the first paragraph, TS 25.213 V2.0.0).

Regarding **claims 10, 14, 27 & 33**, in the first paragraph of 5.2.2 (TSGR1#5(99)724), it discloses that the primary scrambling codes is divided into 32 scrambling code groups, each consisting of 16 primary scrambling codes and there is a one-to-one mapping between each primary scrambling code and the set of secondary scrambling codes, hence one group of the primary scrambling codes comprising 16 primary scrambling codes needs at least 16 sets of secondary scrambling codes that at least 4 bits to identify the set (ID) of the secondary scrambling codes.

Regarding **claims 11, 15, 25 & 31**, in the third paragraph of 5.2.2 (TSGR1#5(99)724), it discloses the primary Common Control Physical Channel (P-CCPCH, page 29, Figure 22, TS25.211 v2.0.0).

Regarding **claims 12, 16, 26, 28, 32 & 34**, in the third paragraph of 5.2.2 (TSGR1#5(99)724) discloses that other downlink physical channels comprising DPCH (as the *data channel*, 5.3.2 TS 25.211 V2.00 & 5.1 TS 25.213 V2.0.0) can be

transmitted with a secondary scrambling code from the set (ID) associated with the primary scrambling code, wherein the downlink DPCH is multiplexed with a downlink DPDCH (data channel in service) and a downlink DPCCH (control channel) (5.3.2 at page 16 of TS 25.211 V2.0.0).

Regarding **claims 29 & 35**, in page 21 (TS 25.213 V2.0.0) discloses that the complex scrambling code sequence $C_{\text{scramb}(i)} = z'_n(i) + j z'_n(i+M)$, wherein the imaginary part $z'_n(i+M)$ is shifted real part $z'_n(i)$ by M period (Table 6, page 22).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 36 and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Terashima (US 6,385,232 B1) in view of Atarius (US 6,278,699 B1) and Chan et al. (US 5,923,650).

Regarding **claims 36 & 42**, Terashima discloses a mobile communication system for data transmission and its method, the mobile communication system comprising:

A searcher (FIG.5) for identifying a primary scrambling code (Long Code 45 FIG.5) being assigned to a base station (column 2, lines 18-20, wherein the long code LC is very specific to every base station);

A descrambler (42 Matched Filter of FIG.5) for descrambling a common channel (the control channel, FIG.1 & column 2, lines 4-9) with the primary scrambling code (Long Code 45 FIG.5);

A controller (41 FIG.5) for acquiring over the common channel a secondary scrambling code identifier (Short code 44) associated with the primary scrambling code (Long code LC of FIG.7A & Short code CSC of 7B).

However, Terashima does not explicitly specify a data channel with a secondary scrambling code and the primary scrambling code and the secondary scrambling code being complex scrambling codes.

Regarding a data channel with a secondary scrambling code, further Atarius teaches in FIG.3 that the data channel with the secondary scrambling code (Short code 63) and described in column 5, lines 34-40 that for receiving data over a traffic channel, the receiver 60 must first know the appropriate short codes to use for despreading. As Terashima detecting Long code and Short code, at the time of the invention was made, it would have been obvious to one of ordinary skill in the art to have the secondary scrambling code descrambling the traffic channel taught by Atarius in Terashima's system for time (and frequency) synchronization of digital radio signals by identifying a synchronization field transmitted on a control channel (column 3, lines 8-11 '699) to provide mobile stations with information needed to access the system (column 3, lines 25-30 '699).

Regarding the primary scrambling code and the secondary scrambling code being complex scrambling codes, further in FIG.6, Chen et al. teaches the complex

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scrambling codes (column 26 lines 25-33) comprising a real component (LPN,) and an imaginary component (LPNQ). At the time of the invention made, it would have been obvious to one of ordinary skill in the art to have the complex scrambling code technique taught by Chen et al. in both BS and MS to generate the scrambling codes to transmit/receive the encoded and modulated CDMA signals especially for the BPSK or QPSK modulated signals.

7. Claims 37-41 and 43-47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Terashima (US 6,385,232 B1) in view of Atarius (US 6,278,699 B1) and Chan et al. (US 5,923,650) as applied to claims 36 and 42 above, and further in view of TSGR1#5(99)724), 3GPP TS 25.213 V2.00 (1999-4) and 3GPP TS 25.211 V2.00 (1999-04).

Regarding **claims 37 & 43**, inherit the limitations of claims 36 and 42, further in the third paragraph of 5.2.2 (TSGR1#5(99)724), it discloses the primary Common Control Physical Channel (P-CCPCH, page 29, Figure 22, TS25.211 v2.0.0).

At the time of the invention was made, it would have been obvious to one of ordinary skill in the art to have the 3GPP Technical Specification (TS) teachings (TSGR1#5(99)724, TS 25.211 & TS 25.213) in Terashima's mobile communication system to accommodate the standards.

Regarding **claims 38 & 44**, inherit the limitations of claims 36 and 42, further in the third paragraph of 5.2.2 (TSGR1#5(99)724) discloses that other downlink physical channels comprising DPCH (as the *data channel*, 5.3.2 TS 25.211 V2.00 & 5.1 TS

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25.213 V2.0.0) can be transmitted with a secondary scrambling code from the set (ID) associated with the primary scrambling code, wherein the downlink DPCH is multiplexed with a downlink DPDCH (data channel in service) and a downlink DPCCH (control channel) (5.3.2 at page 16 of TS 25.211 V2.0.0) (refer to the rationale of the rejection of claim 37).

Regarding **claims 39 & 45**, inherit the limitations of claims 36 and 42, further in the first paragraph of 5.2.2 (TSGR1#5(99)724), it discloses that the primary scrambling codes is divided into 32 scrambling code groups, each consisting of 16 primary scrambling codes and there is a one-to-one mapping between each primary scrambling code and the set of secondary scrambling codes, hence one group of the primary scrambling codes comprising 16 primary scrambling codes needs at least 16 sets of secondary scrambling codes that at least 4 bits to identify the set (ID) of the secondary scrambling codes (refer to the rationale of the rejection of claim 37).

Regarding **claims 40 & 46**, inherit the limitations of claims 36 and 42, further in the third paragraph of 5.2.2 (TSGR1#5(99)724) discloses that other downlink physical channels comprising DPCH (as the *data channel*, 5.3.2 TS 25.211 V2.00 & 5.1 TS 25.213 V2.0.0) can be transmitted with a secondary scrambling code from the set (ID) associated with the primary scrambling code, wherein the downlink DPCH is multiplexed with a downlink DPDCH (data channel in service) and a downlink DPCCH (control channel) (5.3.2 at page 16 of TS 25.211 V2.0.0) (refer to the rationale of the rejection of claim 37).

Regarding **claims 41 & 47**, inherit the limitations of claims 36 and 42, further in page 21 (TS 25.213 V2.0.0) discloses that the complex scrambling code sequence $C_{\text{scramb}(i)} = z'_n(i) + j z'_n(i+M)$, wherein the imaginary part $z'_n(i+M)$ is shifted real part $z'_n(i)$ by M period (Table 6, page 22) (refer to the rationale of the rejection of claim 37).

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Edith M. Chang whose telephone number is 571-272-3041. The examiner can normally be reached on M-F.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammed H. Ghayour can be reached on 571-272-3021. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Edith Chang
July 13, 2006


MOHAMMED GHAYOUR
SUPERVISORY PATENT EXAMINER